THE FOLLOWING ARE THE ENGLISH TRANSLATION OF ANNEXES TO THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (ARTICLE 34):

Amended Sheets (Pages 16-17)

As enclosed to IPRP

We claim:

1. A process for carrying out exothermic chemical equilibrium reactions in a fluidized-bed reactor, wherein there is a temperature distribution along the flow direction in the fluidized bed of the fluidized-bed reactor and the temperature difference between the lowest temperature and the highest temperature is at least 10 K and wherein the temperature within the fluidized bed decreases from an absolute temperature maximum along the flow direction to the surface of the fluidized bed.

2. The process according to claim 1, wherein the temperature within the fluidized bed decreases from an absolute temperature maximum in the fluidized bed along the flow direction to the surface of the fluidized bed and to the gas distributor.

3. The process according to either claim 1 or 2, wherein the distance between the absolute temperature maximum and the gas distributor is smaller than the distance between the absolute temperature maximum and the surface of the fluidized bed.

4. The process according to any of claims 1 to 3, wherein the temperature of the reaction gases fed to the fluidized-bed reactor is below the lowest temperature occurring in the fluidized bed.

5. The process according to any of claims 1 to 4, wherein the temperature distribution is produced by heat transfer to at least one heat exchanger within the fluidized bed.

6. The process according to any of claims 1 to 5, wherein the chemical reaction is the preparation of chlorine from hydrogen chloride and oxygen.

7. The process according to any of claims 1 to 6, wherein the fluidized bed comprises a catalyst which comprises a metal component on an oxidic support.

8. The process according to claim 7, wherein the catalyst comprises a ruthenium compound.

9. A fluidized-bed reactor for carrying out the process according to any of claims 1 to 8 in a fluidized bed (5) into which reaction gases are fed via a gas distributor (4), wherein at least one heat exchanger (12, 28) is located in the fluidized bed (5) to control the temperature distribution within the fluidized bed (5) and wherein the distance between the gas distributor (4) and the nearest heat exchanger (12) is at least 50 cm.